

Amendments to the Specification

Please replace the paragraph beginning line 32, page 1, with the following amended paragraph:

--For example, ~~American Patent~~ US Pat. N°. 4,838,418 details the obtainment of HIPS mainly with capsular morphology through polymerization of styrene in presence of a styrene/butadiene copolymer with a 40/60 ratio and a chain transference agent as regulator of the of the polystyrene matrix molecular weight. On the other hand, ~~American patent~~ US Pat. N° 4,771,107 outlines the use of styrene/butadiene copolymers with a high-styrene content to produce ABS with good transparency. On its part, ~~patent~~ US Pat. N° 5,223,577 by means of using styrene/butadiene copolymers, and from polymerization of styrene and acrylonitrile in presence of such copolymers, details how to obtain ABS with good optical and mechanical properties.--

--Please replace the paragraph beginning line 5, page 2, with the following amended paragraph:

More recently, ~~American patent~~ US Pat. N° 5,756,579 details the use of styrene/butadiene copolymers with a low-styrene content to produce ABS with excellent balance among between the physical and mechanical properties. US Pat. N° 4,990,236 reports the synthesis of impact-resistant material through the *in situ* formation of an implanted copolymer by using, to that end, different SBR-, SBS-, BSB- and/or SBSB-type styrene/butadiene copolymers with different compositions, and styrene by means of a polymerization process in solution.--

Please replace the paragraph beginning line 12, page 2, with the following amended paragraph:

--On the other hand, ~~Ameriean patents~~ US Pat. N° Nos 5, 428,104, and 5,591,195 outline the HIPS synthesis by using

block copolymers of styrene/butadiene with a 30/70 ratio, where the particles obtained present capsule and hank-type morphologies, while the materials have a good firmness together with a high brightness. The reason for which different morphologies are obtained by using the same copolymer is due to the use of different concentrations of a chain transference agent during the synthesis process.--

Please replace the paragraph beginning line 18, page 2, with the following amended paragraph:

--On the other hand, ~~American patent~~ US Pat N° 5,473,014 details the production of HIPS with different morphologies by using mixtures of styrene/butadiene copolymers with different compositions, or else, by means of the joint action of polybutadiene and styrene/butadiene copolymers in different proportions. Therefore, capsule-, cell- and roll-type morphologies are featured and materials obtained display high brightness and great impact resistance, at the same time.--

Please replace the paragraph beginning line 24, page 2, with the following amended paragraph:

--~~American patents~~ US Pat. N° 5,985,997 and US Pat. N° 4,524,180 ~~outline~~ outline the styrene polymerization reaction in presence of polybutadiene and a styrene/butadiene block copolymer ~~in styrene/butadiene blocks~~ with a 40/60 ratio. The obtained HIPS feature a bimodal distribution of particles with capsule-type morphologies, with a particle size of 0.2 to 0.6 μm , and particles with salami-type morphologies with a size of 1.2 to 8 μm . The presence of such particle types and sizes give the material, at the same time, good mechanical and optical properties.--

Please amend the title on line 1, page 3, as follows:

~~--OBJECTIVES~~ OBJECTS OF THE INVENTION--

Please amend the title on line 10, page 3, as follows:

~~--~~BRIEF DESCRIPTION OF THE FIGURES--

Please replace the paragraph beginning line 12, page 4, with the following amended paragraph:

~~--A) A block copolymer ~~in blocks~~ based on alkadiene (conjugated diene), and an aromatic vinyl compound with at least one block of the polydispersed vinyl aromatic compound; and--~~

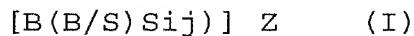
Please replace the paragraph beginning line 26, page 4, with the following amended paragraph:

~~--The production of impact-resistant materials, according to this invention, is performed through polymerization, preferably selected among batch polymerization, ~~continual or semi-continual~~ continuous or semi-continuous polymerization, polymerization of a vinyl aromatic monomer solution, preferably styrene, and a block copolymer ~~in blocks~~ based on an alkadiene (conjugated diene), and a vinyl aromatic compound, with at least, a block of the polydispersed vinyl aromatic compound, preferably a styrene/butadiene copolymer with a polydispersity of the polystyrene block at interval of ~~10.1~~ 1.01 to 4. The production of such materials is preferably carried out by a mass process, thoroughly outlined in the state of the art, by using free radical initiators, variable agitation between 30-150 rpm, and by using a configuration in the agitation system preferably of the anchor-turbine type, until attaining the~~

inversion of phases. Once it has happened, generally at 20-40% of conversion, reaction is resumed in suspension by using a suspension medium, which basically consists of water, polyvinyl alcohol, nonylphenol and sodium chloride in variable ratios. Any other well-known suspension medium, however, can be used in the state of the art as regards polymerization processes in suspension. Materials produced in that way present diverse morphologies dot-, rod- or capsule-type., which will mainly depend on the block polydispersity of polystyrene in the predecessor copolymer, with particle sizes of 0.2 μ m, which at the same time, give the material a good transparency and impact.--

Please insert the following new paragraphs immediately before the paragraph beginning line 8, page 5, as follows:

--Copolymers that may be used in this invention are preferably selected from the group consisting of linear, radial, perfect and partially randomized block copolymers corresponding to funeral formula (I)



Wherein i and j are integers equal to or greater than 1;

Z is a residue of a coupling agent or a termination agent;

S is a vinyl aromatic monomer; and

B is a conjugated diene;

And wherein the elastomeric portion (alkadiene) may be totally or partially hydrogenated. The S/B copolymer ratio is from 10/90 to 90/10.--

Please replace the paragraph beginning line 8, page 5, with the following amended paragraph:

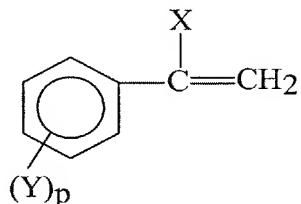
~~--Copolymers that may be used in this invention, are preferably selected among linear or radial block copolymers, in perfect blocks or partially randomized blocks responding to the general formula $[(B(B/S)s)_i(j)]_i Z$, where $i, j = 1, 2, 3\dots$; $Z =$ remains of the coupling agent or termination agent, S a vinyl aromatic monomer and B an alkadiene and where the elastomeric portion may be totally or partially hydrogenated. The S/B copolymer composition may vary between 10/90 to 90/10, preferably 20/80 to 80/20, and more preferably 30/70 to 40/60.~~

Molecular weights of copolymer can be between the interval 100, 000 to 450,000 g/mol. The molecular weight of the vinyl aromatic monomer-based polymer block ranges between the interval of 5, 000 to ~~420, 000~~ 420,000 g/mol, preferably 30, 000 to 120, 000 g/mol, and the vinyl aromatic monomer block presents a polydispersity M_w/M_n at the interval of 1.01 to 4. Copolymers with the afore-outlined molecular parameters are preferably obtained through anionic polymerization; but any other polymerization method may be indistinctly used and which leads to the formation of copolymers with the desired characteristics.--

Please replace the paragraph beginning line 22, page 5, with the following amended paragraph:

~~--For the production of impact-resistant materials from block copolymers with polydispersed blocks, subject matter of this invention, the styrene monomer is preferably used. However, it is possible to use different vinyl aromatic~~

monomers, understanding as such, the non-saturated ethylene compound of the formula (I) (11):



(I) (11)

Where X represents a hydrogen or an a C₁-C₄ alkyl radical with C₁-C₄,

p is zero or a whole number between 1 and 4 an integer from 1 to 54; and

Y represents a halogen or an a C₁-C₄ alkyl radical. with C₁-C₄.

Among the vinyl aromatic monomers responding to the formula (I) according to this invention are the following: toluene vinyl, styrene, methyl-styrene, mono-, di-, tri-, tetra-, and penta- chlorostyrene, and the corresponding alpha-methylstyrene, alkylated in the nucleus, and the corresponding to alpha-methylstyrene; ortho- and para-methylstyrene, ortho- and para-ethylstyrene, ortho- and para-methyl-alpha-styrene, among others. These monomers can be used alone or in combinations of them, or with any other polymerizable monomer, preferably acrylic monomers, metaacrylic methacrylic, acrylonitrile, and maleic anhydride, among others.--

Please replace the paragraph beginning line 8, page 8, with the following amended paragraph:

--In a reactor with a 1 gallon capacity, 920 g (92 % P/P) of styrene were added, as well as 80 g ~~(8% P/P)~~ (8% P/P) of copolymer H1-PT1 (Table 1), and was stirred up at 65 rpm at room temperature until the complete dissolution of elastomer. By this time, it was added a 0.05% P/P of ~~benzoile-benzoyl~~ peroxide (BPO) and polymerized at 80 °C and keep the stirring up constant at 40 rpm until inversion of phases (25-30% of conversion). Thereafter, 0.1% P/P of ~~terbutile-terbutyl~~ perbenzoate (PBTB) was incorporated to the reaction system, followed by the suspension medium. The latter consisted of 2 liters of water, 1.8 g of polyvinyl alcohol, 0.7 g of nonylphenol, and 1,7 g of sodium chloride. The polymerization reaction continued at an agitation speed of 650-700 rpm following a ramp program temperature-time of 2 hours, at 125°C, 2 hours at 145°C. Thereafter, the product (pearls) was filtrated, cleansed and dried.--